IN THE CLAIMS:

This version of the claims replaces and supercedes all prior versions of the claims.

1.-5. (Cancelled)

6. (Previously Presented) A demodulation circuit for demodulating a digital transmission signal having improved power consumption levels and sampling frequency for an analog-to digital (A/D) converting means wherein a known signal is inserted in said digital transmission signal at transmission, said demodulation circuit comprising:

said A/D converting means for performing A/D conversion of a base band signal obtained by demodulation of said digital transmission signal; and

phase shifting means for repeatedly varying a phase shift of one of said digital transmission signal and said base band signal before digital conversion by said A/D converting means on the basis of a comparison between said known signal after digital conversion by said A/D converting means and prior to a parallel-to-serial (P/S) conversion with said known signal that was inserted at transmission, wherein said phase shifting means modifies shifting amounts of a plurality of phase shifting elements for N times (in which N is an integer greater than or equal to one) where the phase shift equals $\Delta\theta_n$ (in which n is in the range of 1 to N) and a comparison means compares said known signal after digital conversion by said A/D converting means and said known signal inserted at transmission for each of said N times and a result from said comparison means is stored in a memory means for each of said N times and a second comparison means for comparing each of the N results from said comparison means.

7. (Previously Presented) A demodulation circuit as set forth in claim 6, wherein said phase shifting means causes phase shift to a phase where a correlation value of said known signal inserted at transmission and said known signal after digital conversion by said A/D converting means becomes the highest.

8. (Previously Presented) A demodulation circuit as set forth in claim 6, wherein said phase shifting means repeats a process for N times for M times, in which M is positive integer to take an average value of optimal phase shifting amount for M times as a final optimal phase shifting amount.

9.-19. (Cancelled)

20. (Previously Presented) A demodulation method for demodulating a digital transmission signal having improved power consumption levels and sampling frequency for an analog-to-digital (A/D) converting means wherein a known signal is inserted in said digital transmission signal at transmission said demodulation method comprising:

(a) performing A/D conversion of a base band signal obtained by demodulation of said digital transmission signal;

(b) comparing said known signal after digital conversion prior to parallel-to-serial (P/S) conversion with said known signal inserted at transmission;

(c)varying a phase shift of one of said digital transmission signal and said base band signal before digital conversion by said A/D converting means on the basis of said comparing;

(d) modifying shifting amounts of a plurality of phase shifting elements for N times (in which N is an integer greater than or equal to one where the phase shift equals $\Delta\theta_n$ (in which n is an integer from 1 to N);

(e) comparing said known signal after digital conversion by said A/D converting means and said known signal inserted at transmission for each of said N times;

(f) storing a result of the comparing in a memory means for each of said N times; and

(g) comparing each of the N results from the comparing in step (e) and storing in step (f).

21. (Previously Presented) A demodulation method as set forth in claim 20, wherein step (g) further comprising varying the phase shift to a phase where a correlation value of said known signal inserted at transmission and said known signal after digital conversion becomes the highest.

22. (Previously Presented) A demodulation method as set forth in claim 20, wherein said steps (e) through (g) are repeated for M times, in which M is positive integer to take an average value of optimal phase shifting amount for M times as a final optimal phase shifting amount.

23.-30. (Cancelled)